

4.1 DYEING TECHNOLOGY - II

L T P
2 - 4

RATIONALE

A diploma holder in textile design must have necessary knowledge of procedures used for dyeing. He must have sufficient knowledge and skills about principles of dyeing operation, materials, equipments and processes. He should be able to execute various recipes for dyeing.

DETAILED CONTENTS

Theory

1. Basic concepts of Acids, Alkalies, Oxidizing and Reducing agents and Optical Brightening Agents (OBA) (4hrs.)
2. Application of Dyes on cellulosic materials (8 hrs)
 - Direct
 - Reactive
 - Azoic
 - Vat
 - Sulphur
3. Application of Dyes on wool/silk (6 hrs.)
 - Basic
 - Acid
 - Metal complex/Chrome Dyes
4. Application of dyes on synthetics (6 hrs.)
 - Basic/Modified Basic dyes on Acrylic/cashmilon
 - Disperse dyes on Polyester/Terelene
 - Acid dyes on Nylon/Polyamides
5. Introduction to equipments/machinery used in dyeing (8 hrs.)
 - Package Dyeing machine
 - Hank Dyeing/Cone Dyeing machine
 - Winch machine
 - Jigger machine
 - Beam Dyeing machine
 - Jet Dyeing machine

LIST OF PRACTICALS

1. Dying of cotton with Reactive dyes (Cold barnad/Hot brand)
2. Dyeing of Cotton with Direct Dyes
3. Dyeing of cotton with Azoic colours
4. Dyeing of cotton with Vat Dyes
5. Dyeing of cotton with sulphur dyes
6. Dyeing of wool/silk with Acid/Basic/Metal complex dyes.
7. Application of basic/modified basic dyes on acrylic
8. Dyeing of Nylon with Acid dyes.
9. Dyeing of Polyester with Disperse Dyes.
10. Industrial visit to show working of dyeing machines

INSTRUCTIONAL STRATEGY

The students should be taken to dyeing industry to show them various dyeing processes of dyeing and its machinery so that students can know various dyeing processes being used by textile industry.

RECOMMENDED BOOKS

1. Technology of Bleaching - VA Shenai
2. Scouring and Bleaching - ER Trotman
3. Technology of Dyeing - VA Shenai
4. Chemical Tech of Fibrous Material - ER Trotman
5. Chemistry of Dyes and Principal of Dyeing - V.A. Shenai
6. Art of Dyeing - Chohan
7. The Dyeing of Textile Materials – Puente Cegarra

4.2 FABRIC MANUFACTURE - II

L T P
3 - 4

RATIONALE

The diploma holders in textile design are supposed to have knowledge and skills related to various looms and manufacturing of fabric. Thus in this subject, student will learn manufacturing techniques and mechanism employed to produce fabric.

DETAILED CONTENT

Sr.No.	Theory	Practical Exercises
1.	Introduction to looms & their objectives, their classifications. Nomenclature of different parts of looms & their functions. Loom motions (primary, secondary and auxiliary motions) (5 hrs.)	Demonstration of various parts of handloom
2.	Different Types of sheds, their advantages and disadvantages. Limitations of tappets shedding in designing. Defects of tappets shedding. (8 hrs.)	To study different types of sheds.
3.	Introduction to different picking systems (over pick and underpick motions) (4 hrs.)	To study overpick and underpick motions
4.	Beat up motions, loom timing (6 hrs.)	
5.	Take –up motion:- Five wheel and seven wheel take-up motions, objectives of let-off motion (negative and positive) Protecting motions. (6 hrs.)	To study five wheel and seven wheel take up motion.
6.	Objects of warp protecting motion:- loose reed & fast reed motions. (6 hrs.)	To study loose reed and fast reed motions
7.	Objects of warp stop motion (electrical & mechanical) and weft stop motions (side weft fork motion) (8 hrs.)	To study side weft fork motions
8.	Dobby:- (climax and paper doobby) Dobby defects and their removal. Preparation of doobby chain (5 hrs.)	To study double lift doobby.

RECOMMENDED BOOKS

1. Weaving Mechanism Vol.I, by NN Benerjee
2. Mechanism of weaving TW Fox
3. Principle of weaving by Marks and Robinsons.

4.3 STRUCTURAL FABRIC DESIGN - IV

L T P
3 – 4

RATIONALE

The students of textile design are supposed to have knowledge and skill regarding various advanced weaves and their construction. Hence, in this subject, students will learn different weaves, their method of employment to acquire competency for production of woven designs for different end uses.

DETAILED CONTENTS

THEORY

1. Principles of formation of pile construction of three, four, five and six pick terry fabrics. Their method of drafting and denting. Terry ornamentation. (14 hrs)
2. Pile fabrics: Designing of plain warp pile fabrics in detail. Reversible warp pile structure and double plush. Weaving of weft pile fabrics, weft plushes. Varieties of quilting fabrics. Distinctive features and modifications of toilet fabrics. (14 hrs)
3. Lappet and swivel weaving, features and methods of designing lappet and swivel figures. Comparison of lappet, swivel and embroidered fabrics. (14 hrs)
4. Production of colour and weave effect. (6 hrs)

PRACTICAL EXERCISES

1. Analysis of fabrics
 - a) Objects and methods of analyzing fabric
 - b) Particulars to be analyzed
 - c) Identifying warp and weft in the fabric
2. Analysis of following fabrics.
 - A. Gents Shirting (Cotton)
 1. Stripes on loom
 2. Small geometrical motifs on dobby loom
 - B. Gents Suitings
 1. Trouser length with colour effect in plain weave in cotton
 2. Tweed material for jackets in wool

- C. Ladies dress material
- D. Pile Fabrics

INSTRUCTIONAL STRATEGY

Student should be able to understand different weaves from fabric samples and by weaving. They must be taken to Textile Industries for showing above-mentioned processes.

RECOMMENDED BOOKS

1. Grammer of Textile Design – Nisbet
2. Structural Fabric Design by – Kilby
3. Woven Structures and Design – Doris Goerner; British Textile Technology Group WIRA House, Leeds UK
4. Fibre to Fabric by Ghosh
5. Watson's Advance Textile Design and Colour
6. Watson's Textile Design and Colour
7. Knitting Technology – Spencer
8. Warp Knit Fabric Construction by Charis Wildens U. Wilkens Verlag Germany

4.4 PRINTING TECHNOLOGY – II

L T P
2 – 4

RATIONALE

A diploma holder in textile design must have enough knowledge about principles and practices employed for printing. He must be aware of various printing operations, materials, equipments and processes used for printing.

DETAILED CONTENTS

Theory

1. Printing under resist/reserved style (8 hrs.)
 - Introduction & definition.
 - Batik style.
 - Resist under
 - Reactive Dyes
 - Vat Dyes under Vat Dyed ground

2. Printing under discharge style (8 hrs.)
 - Introduction and Definition
 - Coloured and white Discharge paste
 - Printing of white and coloured discharge with basic dyes
 - Vat dyes on direct coloured dyed ground.

3. Methods of Preparation of screens. (5 hrs.)
 1. Enamel Method.
 2. Photographic Method.

4. Description of various printing machineries (6 hrs.)
 - a) Roller
 - b) Flat Bed.
 - c) Rotary
 - d) Duplex

5. Transfer Printing (5 hrs.)
 - Sublimation Transfer Printing
 - Melt & Film release Transfer Printing
 - Wet Transfer Printing

LIST OF PRACTICALS

1. Printing of cotton, wool, silk by various techniques of tie & die style of printing
2. Printing of cotton and silk with Batik style.
3. Printing of white and coloured resist under reactive and Vat Dyed ground
4. Printing of white and coloured discharge with vat, Basic on direct colour dyed ground.
5. Printing of white and coloured discharge with vat on naphthanol colour dyed ground.
6. Preparation of screens by
 - Enamel Method
 - Photographic Method

INSTRUCTIONAL STRATEGY

The students should be taken to Textile Printing Industries to show them various processes of finishing and its machinery so that they can know the various finishing processes being used by Textile Industry.

REFERENCE BOOKS

1. Technology of Printing by VA Shenai
2. Technology of Printing by Kalley
3. A Glimpse of Chemical Technology of Fibrous Materials by RR Chakarvorty
4. Dyeing and Printing by Uarke
5. Dyeing and Printing by Jyoce Storey

4.5 CAD FOR TEXTILE DESIGN - I

L T P
- - 4

RATIONALE

The term CAD has found its way into all major discipline that have got anything to do with designing or drafting techniques. The major objective of this course is to expose the students to different softwares available in the field of textile design industry so that they are able to use those softwares in the design and construction of various textiles.

DETAILED CONTENTS

Practical Exercises

1. Introduction to latest coral draw & photoshop softwares
2. Use of various tools in coral draw & photoshop.
3. Formation of designs using different tools and application of design on graph paper.
4. Application and selection of suitable colours for a particular design.
5. Scan a design with the help of photoshop
6. Change of colour scheme of the design.
7. Enlargement and reduction of design

RECOMMENDED BOOKS

1. SAMS Coral Draw-II
2. SAMS Adobe Photoshop-I

4.6 PRODUCT DESIGN

L T P
- - 6

Product Design aims at exposing the students to experiment on the practical aspect to a finished product. The student has to select a style, embroidered/painted/printed woven/dyed fabric and then make at least 10 designs using computers – Coral and Adobe Photoshop..

They can continue one or more styles and finish a complete product with 4 different colour ways, at least 50 croques should be made before a final design chart, visualization is made and approved by the supervisor with at least 3 to 4 colour schemes.

The product design has to be presented before the panel of teachers using O.H.P (Slides)

Thrust areas;

1. Design chart
2. Colour schemes
3. Costing of the product
4. Utility aspect of the product
5. Market survey of the product
6. Materials used
7. Export presentation

The teachers alongwith industry personnel will conduct performance assessment of students. The criteria for assessment will be as below:

<u>Criteria</u>	<u>Weightage</u>
Attendance and punctuality	15 per cent
Initiative	15 per cent
Relations with people	15 per cent
Report Writing	55 per cent